

WHAT IS CLAIMED IS:

1 1. A telecommunications system having a protocol architecture over an interface
2 between nodes of the telecommunications system, the protocol architecture including
3 Internet Protocol as a protocol above a link layer protocol, wherein the interface is one
4 of: (1) an interface between a core network and a radio access network which carries
5 circuit switched connections; (2) an interface between a radio network controller (RNC)
6 and a base station; and (3) an interface between two radio network controllers (RNCs).

1 2. The system of claim 1, the Internet Protocol is immediately above the link
2 layer protocol in the transport network layer.

1 3. The system of claim 1, wherein the interface carries a circuit switched
2 connection, and wherein a protocol stack of the protocol architecture in the transport
3 network layer comprises:

4 the link layer protocol;

5 the Internet Protocol on top of the link layer protocol;

6 UDP Protocol on top of the Internet Protocol.

1 4. The system of claim 3, wherein the link layer protocol is Ethernet protocol.

1 5. The system of claim 4, wherein in the Internet Protocol a sequence number is
2 carried in one of an IP option field and a Ipv6 extension header, the sequence number
3 being used for rearranging incoming IP datagrams.

1 6. The system of claim 3, wherein the protocol stack of the protocol architecture
2 further comprises, in a radio network layer, a frame handling protocol on top of the
3 UDP Protocol.

1 7. The system of claim 6, wherein the frame handling protocol rearranges in-
2 coming frames over the interface which carries a circuit switched connection.

1 8. The system of claim 7, wherein the frame handling protocol includes a
2 sequence number field used for rearranging incoming frames.

1 9. The system of claim 1, wherein the protocol stack of the protocol architecture
2 in the transport network layer comprises:

3 the link layer protocol;
4 the Internet Protocol on top of the link layer protocol;
5 UDP Protocol on top of the Internet Protocol; and
6 XTP Protocol on top of the UDP Protocol.

1 10. The system of claim 9, wherein the link layer protocol is Ethernet protocol.

1 11. The system of claim 9, wherein each XTP packet has a connection identifier
2 and a sequence number.

1 12. The system of claim 9, wherein plural user plane data frames are
2 multiplexed in one IP datagram.

1 13. The system of claim 1, wherein the protocol stack of the protocol
2 architecture in the transport network layer comprises:
3 the link layer protocol;
4 the Internet Protocol on top of the link layer protocol;
5 UDP Protocol on top of the Internet Protocol; and
6 UAL2 Protocol on top of the UDP Protocol, wherein the UAL2 protocol each
7 UAL2-PDU carries an integer number of AAL2 packets.

1 14. The system of claim 1, wherein the protocol stack of the protocol
2 architecture in the transport network layer comprises:

3 the link layer protocol;
4 the Internet Protocol on top of the link layer protocol;
5 UDP Protocol on top of the Internet Protocol; and
6 RTP Protocol on top of the UDP Protocol.

1 15. The system of claim 14, wherein the interface is between a radio access
2 network and a core network, and wherein in the RTP Protocol one synchronization
3 source (SSRC) identifier is allocated to each circuit switched connection between the
4 node in the radio access network and the node in the core network.

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